

## Supplementary appendix to the article

### “Maximum incubation period for COVID-19 infection: do we need to rethink the 14-day quarantine policy?”

#### Table of contents

Table S1. Detailed data on the incubation period extracted from the reports cited in the main article.

Data excluded from analysis

References

**Table S1. Detailed data on the incubation period extracted from the reports cited in the main article.**

Reference	Reference in the main article	Total studied population	Persons having incubation period >14 days	Median incubation period, days	Maximal incubation period, days	Exact phrase from the manuscript describing incubation period	Methodology of incubation period measurement	Factors responsible to the variability of the incubation period	Other details
[1]	2	67	1	6	15	“We estimated the median incubation period was 6.0 days (range 1-15 days).” Individual data on incubation periods are plotted at Supplementary Figure 3.	“The incubation period was defined as the time from exposure to the onset of illness. We constructed epidemic curves for date of exposure to illness onset and other key dates relating to epidemic identification and disease process by R software.”	“The mean incubation duration for male was 7.3±3.1 days, and that was 5.7 ±3.0 for female (p=0.054). The mean incubation duration for 10-18 yrs, 19-45 yrs, 46-65 yrs and 66-77 yrs group were 12.0±2.7, 6.3±3.0, 6.8±3.0 and 5.6±2.5 days, respectively.” (Supplementary Figure 3)	-
[2]	3	136	13	Reported only by age groups, not for the whole cohort	17	The incubation periods are plotted at figures 1 and 2 for 15-64 and 65-86 age groups, respectively. Incubation period longer than 14 days had 7 out of 110 patients in 15-64 years and 6 out of 22 patients in 65-86 age groups. Exact data for 4 patients under 15 years are not reported.	“The incubation period for each COVID-19 patient is inferred as the number of days between exposure and symptom onset.”	“For the 15-64 age group, the median incubation time of 7 days, for the 65-90 age group the median 10 days is statistically significantly longer.”	“We included only those COVID-19 patients who stayed in Hubei for at most two calendar days. The day of exposure was taken as the first day to Hubei if the patient stayed in Hubei for one calendar day; or as the middle of the first and second day in Hubei if the patient stayed for two calendar days. By excluding COVID-19 patients who stayed in Hubei for more than two days, one can better define the day of exposure.”
[3]	4	5	1	Not reported	19	“The incubation period for patient 1 was 19 days”.	Not reported	Not reported	Familial cluster of 5 patients.
[4]	5	104	8	6	32	“8 patients got more longer incubation duration (18, 19, 20, 21, 23, 24, 24 and 32 days) that more than 14 days”	“We carefully surveyed the contact history of every patients, including whether he or she ever lived in or travelled to Wuhan, or had closely contacted with people returning from Wuhan during two months before their illness onset. In addition, the history of contacting with animals and eating game meat was also screened. If necessary, we directly communicated with the attending physician, patients or their family members.” “Standard questionnaire and form were used for contact investigation and data collection. The data were independently reviewed by two trained physicians and checked by another two physicians respectively.”	Not reported	“Of the 104 patients, 93 (89.42%) patients had a clear contact history with the infections, 11 (10.53%) were sporadic cases that hardly identified a definite contact history.” “Family clusters accounted the most infections of COVID-19 in this study population. Cluster 6 (2 cases) and 14 (7 cases) infected via taking the same public vehicle together. Nosocomial transmission did not happen so far in the two centers. Six clusters (Table 1, cluster 2, 12, 14, 15, 18 and 19) demonstrated the existing of transmission chain of 3 “generation” (index case of one cluster identified as an infector who originally contracted the COVID-19 from Wuhan and then infected someone else, who infected another individual). Of note, 5 asymptomatic cases (C’1, C’2, C’3, C’4 and C102) were found in this study.” “As an asymptomatic patient, C’4 infected C92 (C’4’s mother), C94 (C’4’ s father-in-law) and C102 (C’4’ s daughter)”
[5]	6	391	Not reported	4.8	Not reported	“We estimated that about 5·0% of	“We defined symptom-based	Not reported	“Household contacts and those travelling with a

					<p>cases who develop symptoms would not show symptoms until 14 days after infection.”</p> <p>“95% of secondary cases were expected to develop symptoms within 14·3 days (95% CI 11·1–17·6) of their infector”.</p>	<p>surveillance to include symptomatic screening at airport and train stations, community fever monitoring, home observation of recent travellers to Hubei, and testing of patients admitted to hospital. Contact-based surveillance is the identification of cases through monitoring and testing of close contacts of confirmed cases, independently of their symptom presentation. By protocol, those in the contact-based group were tested for SARS-CoV-2 infection regardless of symptoms, whereas those in the other categories were tested only if they showed signs or symptoms of disease.”</p> <p>“Distributions were fit to the timing of key events in each confirmed case’s course of infection and treatment. The time from infection to symptom onset (incubation period) was assumed to be log-normally distributed and estimated as previously described. We determined the left and right boundaries on the possible exposure and symptom onset times. Cases who recently travelled to Hubei were assumed to have been exposed while there. Cases without a recent travel history but with exposure to a confirmed case were assumed to be exposed from the time of earliest to latest possible contact with that case. Only cases for whom we could identify the earliest and latest possible time of exposure and who had a date of symptom onset were included in the analysis.”</p> <p>“Transmission was characterised by examining the relationship between confirmed cases and their infected and uninfected close contacts. The household secondary attack rate was calculated as the percentage of household contacts (those sharing a room, apartment, or other sleeping arrangement) who were later confirmed to have SARS-CoV-2 infection. The distribution of serial intervals (the time between symptom onset in the confirmed case and their infected contacts) was calculated by fitting parametric distributions to the time of symptom onset in clear</p>		<p>case were at higher risk of infection (odds ratio 6·27 [95% CI 1·49–26·33] for household contacts and 7·06 [1·43–34·91] for those travelling with a case) than other close contacts.”</p> <p>“The household secondary attack rate was 11·2% (95% CI 9·1–13·8), and children were as likely to be infected as adults (infection rate 7·4% in children &lt;10 years vs population average of 6·6%).”</p> <p>“At the time of the first clinical assessment, 25 (29%) of 87 cases in the contact-based surveillance group did not have fever, and 17 (20%) of 87 had no symptoms. By contrast, 258 (88%) of 292 in the symptom-based surveillance group had fever, and only eight reported no symptoms.”</p>
--	--	--	--	--	--	---	--	---

							case–contact pairs.” “When assessing the impact of characteristics of infected individuals, we only included risk sets where a single potential infected individual was clearly identifiable.”		
--	--	--	--	--	--	--	---	--	--

#### Data excluded from analysis

We also identified the manuscript “Jiang X, Niu Y, Li X, et al. Is a 14-day quarantine period optimal for effectively controlling coronavirus disease 2019 (COVID-19)? medRxiv. 2020. doi:10.1101/2020.03.15.20036533” that indicates incubation period longer than 14 days in 11.5% out of 2015 individuals. It has been excluded from our analysis because it assumes “gastrointestinal tract infection through oral transmission” in some patients that is not recognized as a transmission route for COVID-19 infection.

#### References

1. Tan W, Lu Y, Zhang J, Wang J, Dan Y, Tan Z, et al. Viral Kinetics and Antibody Responses in Patients with COVID-19. medRxiv. 2020. DOI: 10.1101/2020.03.24.20042382.
2. Jiang AB, Lieu R, Quenby S. Significantly longer Covid-19 incubation times for the elderly, from a case study of 136 patients throughout China. medRxiv. 2020. DOI: 10.1101/2020.04.14.20065896.
3. Bai Y, Yao L, Wei T, Tian F, Jin D-Y, Chen L, et al. Presumed Asymptomatic Carrier Transmission of COVID-19. JAMA. 2020 Feb;323(14):1406–7. DOI: 10.1001/jama.2020.2565.
4. Qiu C, Xiao Q, Liao X, Deng Z, Liu H, Shu Y, et al. Transmission and clinical characteristics of coronavirus disease 2019 in 104 outside-Wuhan patients, China. J Med Virol. 2020; DOI: 10.1002/jmv.25975.
5. Bi Q, Wu Y, Mei S, Ye C, Zou X, Zhang Z, et al. Epidemiology and transmission of COVID-19 in 391 cases and 1286 of their close contacts in Shenzhen, China: a retrospective cohort study. Lancet Infect Dis. 2020;3099(20):1–9. DOI: 10.1016/S1473-3099(20)30287-5.